

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A maintenance method for an ink jet head which ejects ink supplied from an ink control tank via an ink supply path, as ink droplets from a plurality of orifices arranged in an orifice plate, the method comprising:

controlling the pressure in said ink ~~supply path~~ control tank against the atmospheric pressure applied to a surface of the ink to push the ink out of each orifice as a purging operation of ink carried out to remove particles of dirt in the ink and then maintain the pressure applied to the ink surface of each orifice approximately to the atmospheric pressure such that the surface of the ink is not set back from said orifice plate toward said ink supply path after the purging operation; and

sucking ink remaining in the vicinity of each orifice and on a surface of said orifice plate surrounding each orifice in a state where the pressure applied to the ink surface of each orifice is maintained approximately to the atmospheric pressure.

2. (Currently Amended) A maintenance apparatus for an ink jet head which ejects ink supplied from an ink control tank via an ink supply path, as ink droplets from a plurality of orifices arranged in an orifice plate, the apparatus comprising:

a pressure control section which controls the pressure in said ink ~~supply path~~ control tank against the atmospheric pressure applied to a surface of the ink to push ink out of each orifice as a purging operation of ink carried out to remove particles of dirt in the ink and then maintain the pressure applied to the ink surface of each orifice approximately to the atmospheric pressure such that the surface of the ink is not set back from said orifice plate

toward said ink supply path after the purging operation; and

an ink suction section which sucks ink remaining in the vicinity of each orifice and on a surface of said orifice plate surrounding each orifice after the purging operation in a state where the pressure applied to the ink surface of each orifice is maintained approximately to the atmospheric pressure by said pressure control section.

3. (Original) The maintenance apparatus according to claim 2, wherein said ink suction section includes a suction nozzle which moves in an arrangement direction of said orifices along said orifice plate.

4. (Original) The maintenance apparatus according to claim 3, wherein the surface of said orifice plate is a protection member arranged to surround each orifice, and said suction nozzle is set in contact with or separated from said protection member by an air gap during the movement.

5. (Previously Presented) The maintenance apparatus according to claim 2, wherein suction of the ink is carried out in a state where the pressure applied to the ink surface is set in a range of between -0.27 kPa and +0.27 kPa.

6. (Currently Amended) The A maintenance apparatus according to claim 5 for an ink jet head which ejects ink supplied via an ink supply path, as ink droplets from a plurality of orifices arranged in an orifice plate, the apparatus comprising:

a pressure control section which controls the pressure in said ink supply path against the atmospheric pressure applied to a surface of the ink to push ink out of each orifice as a purging operation of ink carried out to remove particles of dirt in the ink and then maintain the pressure applied to the ink surface of each orifice approximately to the atmospheric

pressure such that the surface of the ink is not set back from said orifice plate toward said ink supply path after the purging operation; and

an ink suction section which sucks ink remaining in the vicinity of each orifice and on a surface of said orifice plate surrounding each orifice after the purging operation in a state where the pressure applied to the ink surface of each orifice is maintained approximately to the atmospheric pressure by said pressure control section,

wherein the pressure applied to the ink surface is set in a range of between $[-6.7]$ - 0.67 kPa and -2.0 kPa after suction of the ink is finished.

7. (Previously Presented) The maintenance method according to claim 1, wherein suction of the ink is carried out in a state where the pressure applied to the ink surface is set in a range of between -0.27 kPa and $+0.27$ kPa.

8. (Currently Amended) ~~The A~~ maintenance method according to ~~claim 7~~ for an ink jet head which ejects ink supplied via an ink supply path, as ink droplets from a plurality of orifices arranged in an orifice plate, the method comprising:

controlling the pressure in said ink supply path against the atmospheric pressure applied to a surface of the ink to push the ink out of each orifice as a purging operation of ink carried out to remove particles of dirt in the ink and then maintain the pressure applied to the ink surface of each orifice approximately to the atmospheric pressure such that the surface of the ink is not set back from said orifice plate toward said ink supply path after the purging operation; and

sucking ink remaining in the vicinity of each orifice and on a surface of said orifice plate surrounding each orifice in a state where the pressure applied to the ink surface of each

Application Serial No.: 10/600,434
Reply to Office Action dated January 13, 2005

orifice is maintained approximately to the atmospheric pressure,

wherein the pressure applied to the ink surface is set in a range of between $[-6.7] \pm 0.67$ kPa and -2.0 kPa after suction of the ink is finished.

9. (New) The maintenance method according to claim 8, wherein suction of the ink is carried out in a state where the pressure applied to the ink surface is set in a range of between -0.27 kPa and +0.27 kPa.

10. (New) The maintenance apparatus according to claim 6, wherein suction of the ink is carried out in a state where the pressure applied to the ink surface is set in a range of between -0.27 kPa and +0.27 kPa.